CLAIMS

1.The isolated polypeptides having SEQ ID N° 14, 15, 17, 21, 22, 23, 28, 29, 30, 32, 36, 38, 39, 41-44, 46, 49, 50, 52 to 55, 58, 60, 63, 133-138.

2- Isolated antigenic polypeptides according to claim 1 obtainable by a process comprising the steps of :
a- selecting on the basis of sequence analysis those of the polypeptides which are either located in the outermembrane or secreted by the bacteria,
b- identifying the genes coding for said polypeptides which are conserved in B2/D clinical isolates,
c- purifying the polypeptides identified in step a, which are found in step b to be conserved in B2/D isolates,
d- testing the polypeptides for immunogenicity using animals models.

3. Isolated polynucleotides, coding for a polypeptide according to claim 1 or 2, according to the universal genetic code.

4. Isolated polynucleotides according to claim 3, having sequences selected in the group comprising SEQ ID N° 80, 81, 83, 87-89, 94-96, 98, 102, 104, 105, 107-110, 112, 115, 116, 118, 119, 126, 127, 130, 132, 135, 146-151.

5. An expression vector comprising at least an isolated polynucleotide according to claim 3 or 4.

6. A host cell comprising an expression vector according to claim 5.

7. A process for isolating and identifying antigenic polypeptides, useful as vaccines comprising the steps of :
a- selecting on the basis of sequence analysis those of the polypeptides which are either located in the outermembrane or secreted by the bacteria,
b- identifying the genes coding for said polypeptides which are conserved in B2/D clinical isolates,
c- purifying the polypeptides identified in step a, which are found in step b to be conserved in B2/D isolates,
d- testing the polypeptides for immunogenicity using animals models.

8. The process of claim 7, comprising the use of infected adult animals, eventually immunodepressed, and of infant animals as models for neonatal infections.

9. The use of at least one polypeptide or fragment of these polypeptides selected in the group comprising SEQ ID N°1 to SEQ ID N°66(except SEQ ID N°8), or 133-145 as antigens and the homologous sequences.

10. A vaccine composition specific to *E. coli* extra-intestinal infections, comprising an effective amount of at least one antigenic polypeptide such as selected by the process of claim 7, or according to claim 9, alone or in combination, particularly at least one polypeptide having a sequence selected in the group comprising SEQ ID N°1 to SEQ ID N°66, or 133-145, except SEQ ID N°8 and the homologous sequences, with a carrier.

11. The vaccine composition of claim 10 for preventing urinary system infections, pyelonephritis, sepsis, bacteremia, neonatal meningitidis.

12. The vaccine composition of claim 10 or 11, adapted to specific indication in combination with components directed against other bacteria, such as *S.aureus* or group B *Streptococcus*. Or other bacteria implicated in systemic infections.

13. Antibodies or fragments thereof directed against a polypeptide such as used according to claim 9.

14. Monoclonal antibodies against epitopes of polypeptide and there use as pharmaceutical compound for treatment or prevention of severe infection due to Expec in neonates and patients at risk for such infections.

15. A method for detecting the presence or absence of undesirable extra-intestinal *E. coli*, and/or for the diagnosis of an extra-intestinal *E. coli* infection, comprising the use of at least one polypeptide such as defined in claim 1 or 2 or a polynucleotide according to claim 3 or 4, or an antibody to claim 13 or 14, said polypeptide(s) being optionally in combination with anyone of the polypeptides having SEQ ID N°1-66 to 133-145.

16. Pharmaceutical composition for alleviating and/or preventing and/or treating an undesirable growth of *E. coli* comprising an effective amount of at least one polypeptide according to claim 9, in combination with a pharmaceutically acceptable carrier.